

IN THE SPECIFICATION:

Pages 21 and 22, please amend the paragraph bridging those pages as follows:

Referring to Fig. 2, in one embodiment, the nerve conduction sensor 5 has an interface 25 that serves as a communications port between the nerve conduction sensor 5 and external devices, such as an electronic controller 95 (see Fig. 3). The nerve conduction sensor 5 also has a series of traces that provide communication between the connector-interface 25 and internal elements of the sensor. In a preferred embodiment, illustrated in Fig. 2, these traces 100, 105, 110 and 115 are capable of transmitting electronic signals and are embedded within a unitary housing of sensor 5. As shown in Fig. 2, the nerve conduction sensor 5 includes traces 100 that communicate signals from the stimulation elements 35 on the stimulator 10 to the connector-interface 25; traces 105 that communicate signals from the element array 30 on the detector 15 to the connector-interface 25; traces 110 that communicate signals from the reference electrode 90 to the connector-interface 25; and traces 115 that communicate electronic signals from the temperature probe 65 to the connector-interface 25. In one embodiment, the traces are created by printing silver lines 45 (Fig. 2A) on the Mylar substrate 40 which are in direct communication with conductive gels 50 at both the stimulation and detection sites. In this embodiment, the foam mask 55 is positioned on top of these traces to prevent shorting.

Page 24, please amend the paragraph commencing in line 6 as follows:

One embodiment of the controller 95 contains two differential amplifiers each of which is connected to two electrodes within the electrode array 30. In one particular embodiment, one differential amplifier is electronically connected to electrodes 70 and 80, through connector interface 25 and traces 105, and another differential amplifier is electronically connected to electrodes 75 and 85, through connector interface 25 and traces 105. This configuration thus represents two differential bipolar recordings. Other configurations by which the electrodes 30 are connected to the amplifier have been contemplated and should be considered within the scope of the present invention.